January 17, 1989
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KANSAS CITY DISTRICT, CORPS OF ENGINEERS
LAKE ONTARIO ORDNANCE WORKS

ACRES RESPONSE TO REVIEW COMMENTS: DRAFT REMEDIAL INVESTIGATION REPORT

Reviewer: Joseph S. Pizzuto, P.E.
Chemical Waste Management, Inc.

Review Date: January 11, 1989

Comment 1. Acres installed monitoring Wells MW-A-1S and MW-B-1S to investigate downgradient groundwater contamination originating from Area "A" and Area "B", respectively (see Figure 8-11). Both wells are screened in Zone 1 upper tills. MW-A-1S is located approximately 300 feet northwest of the buried drums of Area "A". This distance is too far to effectively monitor contamination from Area "A". On page 8-13, Acres estimates that based on hydraulic properties of the upper tills, a contaminant front would have migrated only ten feet from the trench. MW-B-1S is not located downgradient from Area "B" as intended, based on flow paths shown on Fig. 8-11. Based on the above, wells MW-A-1S or MW-B-1S do not appear to be located properly to characterize shallow groundwater contamination. CWM recommends the installation of additional wells properly located to characterize any shallow groundwater contamination that may be present.

Response:
The downgradient monitoring wells installed to monitor Areas A and B were located as close as accessibly possible to the predefined boundaries of the two areas. In view of the very low groundwater migration rate within the upper glacial tills, the need for additional wells to monitor the localized contamination is questioned. In regard to the direction of groundwater flow, due to the abnormal drought conditions during the summer of 1988 and the relatively short interval of time between the installation and development of the wells and the collection of groundwater measurements at the time of sampling, the observed water levels may not represent static conditions. This assumption is supported by historical data for CWM wells in the area which indicate dissimilar groundwater flow (Refer to Figure 2-18 of the RI Report). In an attempt to better define the direction of groundwater flow within the upper tills, Acres has suggested the collection of additional groundwater elevations, preferably including measurements from CWM wells and piezometers. These water level measurements would be collected during the recommended additional sampling program as presented in Section 12 of the RI Report.

Comment 2. Geophysical investigations in Area "C" indicate the presence of buried metal in a feature measuring approximately 20 feet by 200 feet (Appendix C, Fig. 5). Former employee5 of Olin reported a drum-filled trench of similar dimensions in the same general area (page 4-8). As described on page 5-8, Acres excavated one exploratory trench designated Test Pit C-2 in this area. No drums or other metal were found. The location of C-2 as shown on Fig. 5-2, however, does not coincide with the location recommended by the geophysical consultant in Appendix C, Fig. 5. Test Pit C-2 is located near the extreme western end of the area of buried metal, and it may have missed the drum filled trench completely. CWM recommend5 that an additional exploratory trench be excavated at the location originally recommended by the geophysical consultant as shown in Appendix C, Fig. 5.

Response:
The actual location of test pit TP-C2 has been incorrectly designated on Figure 5-2. The test pit was excavated approximately 100 feet east of the second power pole east of Access Road #2 or approximately 120 feet east of monitoring well couplet, MW-C-3S+D shown on Figure 5-2. The excavation was conducted at the original location recommended by the geophysical consultant. Figure 5-2 has been corrected in the final report.

Comment 3. The investigation failed to find any TNT lines. On page 12-3, the report states that no further investigations are warranted and that the decision to do so would present a significant departure from the original scope of the investigation. No additional information on the TNT lines has been gained by this investigation other than their nonexistence at several test pit locations. Since CWM Chemical Services, Inc. has encountered buried TNT lines during excavation5 for various projects and the lines are indicated on previous drawings of the site, CWM recommend5 further investigations, such as geophysical surveys, based upon these drawings.

Response:
In an attempt to locate the TNT and acid waste lines Acres has conducted the following activities:

- Interviewed several CWM employees regarding possible waste line locations;

- Reviewed maps of the TNT and acid waste line locations and invert elevations. The maps include some location5 where the lines were previously encountered by CWM. Detailed measurements were taken from the maps and marked off in the field at several location5 in an attempt to find the waste lines; and

- Lateral exploratory trenches were excavated at five locations. These excavations extended well beyond the location5 and invert elevations designated on the drawing5 obtained from CWM

In addition, Acres has consulted with the geophysical subcontractor, Delta Geophysical, regarding geophysical investigations to detect the vitrified clay waste lines. Delta Geophysical's conclusions were in agreement with those of A-Cubed, the geophysical consultant used by Golder Associates. In a letter dated November 9, 1987 from A-Cubed to Golder Associates, A-Cubed stated that non-metallic pipes are detectable by EM and magnetics only if the line contains a magnetic electrical property contrast and that ground penetrating radar, the preferred method for detecting non-metallic pipe, would probably not work due to the natural soil condition5 at the site. Based on this conclusion along with the fact that Acre5 had drawings that approximately located the waste lines, a geophysical survey to locate the lines was not conducted.

Comment 4. A discussion of the underground water flow between Zone 1 (Upper Tills) and Zone 3 (Silt/Sand Aquifer) is presented on page 8-10. The report conclude5 that the vertical component of groundwater flow is in an upward direction from Zone 3 to Zone 1. This conclusion is in direct opposition to that reached by Golder Associates in previous investigations where vertical gradients have been shown to be generally in a downward direction. Recommend this inconsistency be resolved.

Response:
Due to an error in the review of groundwater elevation data, the direction of vertical groundwater flow was incorrectly stated. The final report has been corrected to indicate that the overall groundwater flow is in a downward direction.

Comment 5. As described on page 10-3, well MW-C-1S ehowed low level contamination (20 ug/l 1,2-dichloroethene). The well was intended to be an upgradient well for Area "C". The contamination, therefore, is suspected to be due to an unknown upgradient source. Further investigation to determine the source of the contamination is recommended.

Response:
The detection of 1,2-dichloroethene occurred upgradient of Area C at a location which is actively being used by CWM. There is no information indicating the use of 1,2-dichlorethene by the Department of Defense or its contractors. As such, the occurrence of 1,2-dichloroethene is not believed to be related to past Department of Defense activities.

Closing Comment: CWM requests that a meeting be scheduled between the Corps of Engineers, Acres, CWM Chemical Services, Inc. and Golder Associates, our RFI contractor, to discus5 the findings contained in your initial investigation report as well as future

investigations to be conducted on CWM property. The purpose of this meeting would be to coordinate our efforts, assure comparability of data collected and to avoid duplication. The meeting can be held at the Model City Facility.

Response:
Acres has contacted CWM and a meeting has been scheduled for February 8, 1989.